UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/664,975	09/22/2003	Tsuyoshi Tokuda	TOKU3001/JJC/PMB	4973

23364 7590 01/08/2008

BACON & THOMAS, PLLC
625 SLATERS LANE
FOURTH FLOOR
ALEXANDRIA, VA 22314

EXAMINER	
KARLS, SHAY LYNN	
ART UNIT	PAPER NUMBER
3723	

MAIL DATE	DELIVERY MODE
01/08/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/664,975	TOKUDA ET AL.	
	Examiner	Art Unit	
	Shay L. Karls	3723	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 October 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-3, 5-73* is/are pending in the application.

4a) Of the above claim(s) *2,3,5,7,9,11,14,21,22,25 and 27-73* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,6,8,10,12,13,15-20,23,24 and 26* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

This application contains claims 2-3, 5, 7, 9, 11, 14, 21-22, 25, 27-73 are drawn to an invention nonelected with traverse in the reply filed on 6/30/06, 1/19/07 and 4/30/07. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 6, 8, 10, 12-13, 14-16, 18-20, 24 and 26 are rejected under 35 U.S.C. 102(b) as being anticipated by Tarutani et al. (EP 1048258).

Tarutani teaches an electric blower comprising a motor (53) including a stator (52) and a rotor (51). There is an impeller (64) rotated by the motor. There is an air guide having a plurality of guide blades (71, 72) around the impeller. There is a casing (65) enclosing the impeller and the air guide. The casing is provided with a number of exhaust openings (65a) through which a part of an air stream suctioned by the impeller is discharged and a circumferential length of each exhaust opening is substantially identical to a circumferential distance between outer peripheral ends of adjacent guide blades (figure 7). The bottom surfaces of the outer peripheral end portions of volute chamber are located between the lower edges and upper edges of the exhaust openings, each of the volute chambers being an air passageway

formed by two neighboring guide blades (figure 6 shows blades 72 having a volute chamber with a bottom surface located between the upper and lower edges of the exhaust opening). Bottom surface is a relative term and since the claim does not specify what the bottom surface is, it can be determined that any surface of the chamber depending on the orientation of the impeller. Figure 6 shows the guide blades being vertical and therefore the bottom of the chamber can be considered to be the sides of the guide blades which are shown as the horizontal sections labeled 72 on figure 6. Further the bottom surface of the chamber is located between the lower and upper edge of the exhaust opening since it actually extends beyond the openings. Therefore the middle portion of the bottom surface is located between the lower and upper edges.

With regards to claim 6, the total area S1 of the exhaust openings is less than the total cross sectional area S2 of outer peripheral end portions of volute chambers, each of the volute chambers being an air passageway formed by two neighboring guide blades (figure 7 shows that the volute chamber has a greater cross section than the exhaust opening).

With regards to claim 8, the total area S1 of the exhaust openings is less than a total cross sectional area S3 of an air path between the air guide and the casing. The total cross sectional area of the air path has a length greater than the exhaust openings and therefore has a greater cross sectional area.

With regards to claim 10, the blower further comprises a bracket (55) enclosing the motor. The total area S1 of the exhaust openings is less than the total cross sectional area S4 of an air path between the electric motor and the bracket. The total cross sectional area of the air path is longer than the openings and therefore have a greater cross section.

With regards to claim 12, the blower further comprises a bracket (55) enclosing the motor, and the bracket has at least one opening (55a) through which air is supplied therein.

With regards to claim 13, the total area S1 of the exhaust opening is less than the total area S5 of the outlet opening. The total area of the exhaust opening is less than the outlet openings since figure 3 shows the outlet openings being larger in shape.

With regards to claim 15, the total area S1 of the exhaust openings, a total cross sectional area S3 of an air path between the air guide and the casing and a total area S5 of the outlet opening satisfy the flowing relationship: S1<S3<S5. S1 has a smaller cross section than the outlet opening as shown on figure 3 and also has a smaller cross section than the air path between air guide and casing since the air path has a longer longitudinal length. S3 is smaller than S5 because while the lengths appear to be similar, S3 is narrower than the shape of the outlet opening.

With regards to claim 16, the total area S1 of the exhaust openings, a total cross sectional area S3 of an air path between the air guide and the casing, a total area S4 of an air path between the motor and the bracket and a total area S5 of the outlet opening satisfy the flowing relationship: S1<S3<S4<S5. S1 has a smaller cross section than the outlet opening as shown on figure 3 and also has a smaller cross section than the air path between air guide and casing and the air path between the motor and bracket since the air paths both have a longer longitudinal length. S3 is smaller than S4 and S5 because for the longitudinal length of S4 is greater than S3 and while the lengths for S3 and S5 appear to be similar, S3 is narrower than the shape of the outlet opening. Lastly, S5 is larger than S4 because it is wider in cross section than S4.

With regards to claim 18, there is a gap between an outer periphery of the air guide and an inner periphery of the casing (figure 4 and 7).

With regards to claim 19, the guide blades are located at about a center of a circumferential width of an exhaust opening (figure 7).

With regards to claim 20, there are ribs on the outer surface of the casing above the exhaust openings (portion extending outward from the right edge of the exhaust opening in figure 6).

With regards to claim 24, the exhaust openings are quadrilateral shaped (figure 18a-18d) and a side edge of the openings is inclined with respect to a longitudinal direction of a rotation shaft of the motor (figure 18a-18d, 27c).

With regards to claim 26, there is a motor cover covering the exhaust openings (figure 2, element 6).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tarutani ('258).

Tarutani teaches all the essential elements of the claimed invention however fails to teach that the total area S1 of the exhaust openings is set to $40mm^2$ of greater. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the size of the openings so that they are set to $40mm^2$ or greater since the only difference between the prior art and the claims is a recitation of relative dimensions of the claimed device. A device having the claimed relative dimensions would not perform differently than the prior art device and therefore, the claimed device is not patentably distinct from the prior art device. MPEP 2144. Further, the claim would have been obvious because adjusting the total area of the exhaust opening would have yielded predictable results to one of ordinary skill in the art at the time of the invention.

Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tarutani ('258) in view of Finkenbinder et al. (USPN 6166462).

Tarutani teaches all the essential elements of the claimed invention however fails to teach that the number of volute chamber is the same as that of the exhaust openings. While Tarutani teaches that the exhaust openings correspond to the guide ribs, the reference does not explicitly state that the number of openings equals the number of volute chambers between the guide ribs. Finkenbinder teaches a blower having an impeller with guide blades (figure 3) and a casing that is to fit over the impeller having exhaust openings (52, figures 4 and 5). The number of openings is equal to the number of volute chambers. It would have been obvious to one of ordinary skill

in the art at the time the invention was made to modify Tarutani so that the number of openings is equal to the number of volute chambers as taught by Finkenbinder since it will reduce buildup of pressure within the casing, which greatly increases the efficiency of the motor and reduces the noise associated with the operation thereof (col. 4, lines 28-32).

Response to Arguments

Applicant's arguments filed 10/18/07 have been fully considered but they are not persuasive.

The applicant argues that Tarutani ('258) fails to teach that the bottom surface of the of the volute chambers are located between the lower and upper edges of the exhaust openings. As stated above, "bottom surface" is a relative term and since the claim does not specify what the bottom surface is, it can be determined that any surface of the chamber depending on the orientation of the impeller. Figure 6 shows the guide blades (72) being vertical and therefore the bottom of the chamber can be considered to be the sides of the guide blades which are shown as the horizontal sections labeled 72 on figure 6. Further the bottom surface of the chamber is located between the lower and upper edge of the exhaust opening since it actually extends beyond the openings. Therefore the middle portion of the bottom surface is located between the lower and upper edges.

The applicant further argues that the space between guide ribs 72 cannot be considered a volute chamber since does not guide the air stream to the outside. However, the space between ribs 72 can be considered a volute chamber according to the claims, since it is an air passageway formed between two neighboring guide blades. There are no limitations with respect to where

the air stream from the volute chambers should be directed in the claim. Therefore, the volute chambers may direct the air stream inside or outside.

The applicant also argues that the each guide blade is not located at about a center of a circumferential width of an exhaust opening. The positioning of the guide blades changes as the impeller rotates therefore it will at some point during rotation be located at a center of circumferential width of the exhaust opening.

The applicant also argues that the element 65p of Tarutani is not located on an outer surface of the casing. The examiner agrees with this argument and further consideration was necessary to determine that figure 6 shows a rib located on the outer surface of the casing. The rib is located to the right of the exhaust opening.

The applicant also argues that the electric motor chamber 6 as shown in figure 2 is used to contain the electric blower 5 and therefore the election motor chamber of Tarutani is different than the present invention. In response, while the chamber 6 may be used to contain the blower it is clear the chamber also covers the motor and thus the exhaust openings.

The applicant argues that Tarutani fails to suggest a total area of the exhaust opening to be 40 mm^2. The examiner agrees with this argument however it is noted that the examiner did an obvious type rejection to meet the claim rather than an anticipatory rejection. Therefore, while Tarutani does not teach or suggest the exact exhaust opening as claimed, it would have been obvious to modify the size of the exhaust opening to the claimed amount since one of skill would have recognized the advantages of such a size. Further, adjusting the size of the opening would have yielded predictable results.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shay L. Karls whose telephone number is 571-272-1268. The examiner can normally be reached on 7:00-4:30 M-Th, alternating F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Hail can be reached on 571-272-4485. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Shay L Karls/
Primary Examiner, Art Unit 3723